

CLAIMS

1. A broadcast router, comprising:

a plurality of input cards (410) for inputting data into the broadcast router;

5 a plurality of output cards (460) for outputting the data from the broadcast router;

at least one programmable device (466); and

a configuration control card (498) for storing configuration information for configuring the at least one programmable device to perform a first set of functions,

10 wherein the configuration control card is adapted for removal and replacement by at least one other configuration control card that stores other configuration information for configuring the at least one programmable device to perform a second set of functions having a difference from the first set of functions so as to change a functionality of the broadcast router.

15 2. The broadcast router of claim 1, wherein the broadcast router employs switch points, the data received by the plurality of input cards includes input streams, and the one or more functionalities comprise at least one of fading at the switch points, receiving alternate input streams, remote error monitoring, signal mixing, at least one of altering and enabling Digital Signal Processor (DSP) functions, metering, 20 and modifying router size.

3. The broadcast router of claim 1, wherein the configuration information comprises at least one of configuration data for Field Programmable Gate Arrays (FPGAs), at least one of checksums and codes to at least one of enable and disable 25

logic in at least one of FPGAs and other custom Integrated Circuits (ICs), at least one of checksums and codes that at least one of enable and disable different functionality of CPU-based state machines within the broadcast router, and executable code that at least one of enable and disable different functionality of CPU-based systems within  
5 the broadcast router.

4. The broadcast router of claim 1, wherein the difference involves at least one of adding at least one new function and removing at least one existing function.

10 5. The broadcast router of claim 1, wherein the at least one programmable device (466) is disposed on at least one of the plurality of input cards and the plurality of output cards.

6. The broadcast router of claim 1, further comprising:  
15 an expansion card (415) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and  
a matrix card (465) for receiving the data from the plurality of input cards for subsequent routing within the broadcast router.

20 7. The broadcast router of claim 6, wherein at least one of the expansion card and the matrix card provides support protocols to change input/output assignments of the data.

8. The broadcast router of claim 6, wherein the expansion card and the  
25 matrix card are implemented on a same card.

9. The broadcast router of claim 6, wherein the at least one programmable device (466) is disposed on at least one of the expansion card and the matrix card.

5 10. The broadcast router of claim 1, further comprising a control card (499) for providing support protocols to change input/output assignments of the data.

11. The broadcast router of claim 6, wherein the at least one programmable device (466) is disposed on at least the control card.

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12. The broadcast router of claim 1, wherein at least a portion of at least one of the configuration information and the other configuration information is encrypted.

15 13. The broadcast router of claim 1, wherein the configuration control card comprises a user-input device (498C) for receiving a user input for initiating a configuration of the at least one programmable device.

20 14. A method for changing a functionality of a broadcast router, the broadcast router at least having a plurality of input cards, a plurality of outputs cards, and at least one programmable device, the method comprising the step of:

providing (310) a replaceable configuration control card for insertion into the broadcast router and for storing configuration information for configuring the at least one programmable device to perform a first set of functions,

wherein the configuration control card is adapted for removal and replacement by at least one other configuration control card that stores other configuration information for configuring the at least one programmable device to perform a second set of functions having a difference from the first set of functions so as to change a  
5 functionality of the broadcast router.

15. The method of claim 14, wherein the broadcast router employs switch points, the data received by the plurality of input cards includes input streams, and the one or more functionalities comprise at least one of fading at the switch points,  
10 receiving alternate input streams, remote error monitoring, signal mixing, at least one of altering and enabling Digital Signal Processor (DSP) functions, metering, and modifying router size.

16. The method of claim 14, wherein the configuration information  
15 comprises at least one of configuration data for Field Programmable Gate Arrays (FPGAs), at least one of checksums and codes to at least one of enable and disable logic in at least one of FPGAs and other custom Integrated Circuits (ICs), at least one of checksums and codes that at least one of enable and disable different functionality of CPU-based state machines within the broadcast router, and executable code that  
20 at least one of enable and disable different functionality of CPU-based systems within the broadcast router.

17. The method of claim 14, wherein the difference involves at least one of adding at least one new function and removing at least one existing function.

18. The method of claim 14, wherein at least a portion of at least one of the configuration information and the other configuration information is encrypted.

19. A broadcast router, comprising:

5 a plurality of input cards (410) for receiving data into the broadcast router;  
an expansion card (415) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router;

a matrix card (465) for receiving the data from the plurality of input cards for subsequent routing within the broadcast router;

10 a plurality of output cards (460) for receiving the data from the matrix card and for outputting the data from the broadcast router;

at least one programmable device (466); and

a configuration control card (498) for storing configuration information for configuring the at least one programmable device to perform a first set of functions,

15 wherein the configuration control card is adapted for removal and replacement by at least one other configuration control card that stores other configuration information for configuring the at least one programmable device to perform a second set of functions having a difference from the first set of functions so as to change a functionality of the broadcast router.

20 20. The broadcast router of claim 19, wherein the broadcast router employs switch points, the data received by the plurality of input cards includes input streams, and the one or more functionalities comprise at least one of fading at the switch points, receiving alternate input streams, remote error monitoring, signal mixing, at

least one of altering and enabling Digital Signal Processor (DSP) functions, metering, and modifying router size.

21. The broadcast router of claim 19, wherein the configuration information  
5 comprises at least one of configuration data for Field Programmable Gate Arrays (FPGAs), at least one of checksums and codes to at least one of enable and disable logic in at least one of FPGAs and other custom Integrated Circuits (ICs), at least one of checksums and codes that at least one of enable and disable different functionality of CPU-based state machines within the broadcast router, and executable code that  
10 at least one of enable and disable different functionality of CPU-based systems within the broadcast router.

22. The broadcast router of claim 19, wherein the at least one programmable device (466) is disposed on at least one of the plurality of input cards,  
15 the expansion card, the matrix card, and the plurality of output cards.

23. The broadcast router of claim 19, further comprising a control card (499) for providing support protocols to change input/output assignments of the data.

20 24. The broadcast router of claim 23, wherein the at least one programmable device (466) is disposed on at least the control card.

25 25. The broadcast router of claim 19, wherein at least a portion of at least one of the configuration information and the other configuration information is encrypted.